U. S. ENVIRONMENTAL PROTECTION AGENCY
CONDITIONS FOR APPROVAL
FINAL RFI/RI WORK PLAN FOR OU 3

1. Section 5.1.4, Specify RFI/RI Objectives and Data Needs: The objectives stated in this section are deficient. They indicate an intention to inappropriately limit the characterization of the nature and extent of contamination in OU 3. Section 300.430(d) of the NCP states, "The purpose of the remedial investigation is to collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives." One of the remedial alternatives may be no action. DOE's insistence on limiting the objectives of the OU 3 remedial investigation will ensure that insufficient data will be available to develop and evaluate the no action alternative as well as all possible remedial alternatives. The objectives must be modified to broaden the scope of the remedial investigation to characterize the nature and extent of all contamination either resulting from Rocky Flats Plant releases or co-mingled with Rocky Flats Plant releases.

2. The work plan fails to demonstrate coordination between the OU 3 remedial investigation activities and the Option B project activities. DOE makes reference to Option B in 2 paragraphs of the work plan. DOE fails to include relevant Option B project activities in the OU 3 project schedule. As the work plan is written, there is no assurance that the nature and extent of contamination within the Option B project area will be determined before construction activities begin. We state again that it is DOE's responsibility to ensure that any construction activity within OU 3 does not exacerbate the threat to human health or the environment by spreading the existing contamination, does not otherwise interfere with ongoing Comprehensive Environmental Response, Compensation, and Liability Act response activities, and does not result in increased response costs. The OU 3 work plan fails to demonstrate that this responsibility will be met.

3. Section 6, page 28, paragraph 6.3.1.2, Sediment Reservoir Evaluation: There are at least 14 sources of historical data on the quality of the sediments in OU 3 reservoirs (DOE, 1991). Yet, DOE chose 2 of these, the 1985 summary of Great Western Reservoir by Rockwell and the 1984 Standley Lake Sediment Sample Collection Summary, also by Rockwell, on which to base the sediment reservoir evaluation program. What criteria were used to make this determination especially given the poor quality of the information available about these studies? It is EPA's position that DOE's strategy for the investigation of reservoir sediment is seriously flawed for the following reasons:

a. The 1985 Rockwell study was evaluated by DOE for data useability and was rejected on all 6 data useability criteria. This evaluation demonstrated that a risk assessor presented with the results would be unable to perform a quantitative risk assessment, unable to assess exposure pathways, and unable to

quantify confidence levels for uncertainty analysis. There is also an increased potential for false negative and false positive results. A program designed to verify this data may succeed given the lack of information about the original study. The conclusions of such a remedial investigation will be equally as unusable.

b. The 1984 Rockwell study was not evaluated by DOE for data useability due to the lack of information about the study. The problems identified above apply to the Standley Lake investigation also.

c. The sampling design described in the final OU 3 work plan uses different sampling techniques than the ones used in the previous studies. Therefore, the results will not be comparable, and it is technically incorrect to combine data from the old and new studies.

d. Any attempt to use historical data must include calculation of confidence intervals for each new data point.

DOE has shown in Section 6.3.1.2 of the final work plan that to achieve an 80 percent power, 62 samples are required for Great Western Reservoir and 56 samples are required for Standley Lake. Given the unacceptable quality of the historical studies of these reservoirs, the OU 3 remedial investigation must be designed to collect 62 new sediment samples from Great Western Reservoir and 56 new samples from Standley Lake Reservoir.

4. Airborne contamination emanating from the solar ponds is a potentially serious health consideration. On page 2-43 , the OU 4 RFI/RI work plan states, "Air transmission of potential soil contaminants from the Solar Ponds may occur during the windy, dry periods of the year. Airborne releases may also occur, to a limited extent, during site investigation activities or remedial actions if effective protective measures are not taken." Airborne releases are considered to be the primary pathway of concern in OU 3. To understand airborne contamination in the off site areas, the following five factors must be closely examined:

a. The length and degree of proposed intrusive activities at and near sources of contamination;

b. The type of proposed reduction measures of airborne contaminants at the sources;

c. The analysis of the present and proposed future composition of the sludge at the solar ponds in particular, including moisture content;

d. The emission rates for airborne entrainment of contaminants at the sources to be obtained by appropriate direct measurements or mathematical models and;

e. The airborne dispersion characteristics of the airborne contaminants to be generated by appropriate mathematical dispersion models

A more extensive investigation of airborne contamination is needed before the potential health risks can be accurately assessed. EPA expects that the addenda to the final work plan which will describe DOE's proposed air program will include consideration of the above factors. The completeness of the air program cannot be assessed until the addenda to the work plan is reviewed.

5. The following comments pertain to Section 8, the Environmental Evaluation Work Plan and Field Sampling Plan:

Page 8-3, Paragraph 1. Text appears to be missing from the second sentence.

Page 8-14, Paragraph 2. The text states that radionuclides and metals are the Contaminants of Concern (COC) for OU 3 and that RFP-related organic compounds are not expected to be present at OU 3. Table 8-5, however, identifies several organic compounds that have been detected in samples from OU 3 at concentrations exceeding the applicable or relevant and appropriate requirements (ARARs). The reasons for not considering these compounds as COCs should be discussed because they have been identified in RFP samples and meet the criteria to be used for COC identification. If laboratory contamination is suspected, this should be evaluated quantitatively.

Page 8-32, Paragraph 3. The text states that appropriate correction factors must be applied to toxicity test data to account for differences between organisms and conditions in the laboratory versus those of the field. While it is recognized that such differences exist, the text should identify the sources used to develop the correction factors. As written, it appears discussions about the applicability of toxicity data could be arbitrary.

Pages 8-40 through 43, Tables 8-3 through 8-5. The tables have columns for regulatory standards that are not listed. The tables should be completed.

Pages 8-44 through 8-46, Table 8-6. The table indicates criteria for identification of COCs are applied inconsistently at OU 3. At this stage of the study, the COC list should include all potentially listed contaminants. The exclusion of some with no explanation implies arbitrary selection.

Page 8-63, Paragraph 3. The text identifies potential transport media to OU 3 biological receptors as air, soil, surface water, and sediments. Although biological access to ground water is generally limited, the existence of springs containing RFP-contaminated ground water has not been eliminated as a potential

exposure point, and is discussed on page 8-95. Therefore, ground water should not be eliminated as a transport medium.

Page 8-83, Paragraph 3. The text states that the EE report will include a summary section. Table 8-9 does not show such a summary section, however. The table should be revised to include all anticipated sections.

Page 8-85, Paragraph 3. The text states that the initial surveys will be scheduled to coincide with snowmelt or spring storms. The significance of that timing is not clear and should be explained.

Page 8-91, Figure 8-7. The terrestrial habitat types are not defined for large areas of OU 3. While the initial map is considered preliminary, it is not clear whether all habitat types (including disturbed or developed by man) will be identified for all of OU 3. This should be clarified in the text.

Page 8-101, Paragraph 3. The discussion states that vegetation quadrant locations may be placed in areas of accumulation or may be rejected if they are not representative of the local vegetation. The work plan states the intent to use standard statistical analyses to evaluate data. The proposed analyses are based on the concept of randomness. The proposed selection or rejection of sample locations eliminates randomness and should be reconsidered before field work is initiated.

Page 8-107, Table 8-12. Although collection of terrestrial mammal tissue samples is discussed in the text, such samples are not identified in the table. Analysis of terrestrial vegetation for metal content is not listed and a rationale for its exclusion is not provided. The text and table should be revised to provide more information behind decisions apparently made at this early stage of the study.

Page 8-106, Paragraph 2. The text states that sacrificed animals will be placed in glass sample containers. Observations of RFP sampling indicate that plastic bags are more likely sample containers. The sample handling procedures should be reevaluated.

Page 8-119, Paragraph 3. The discussion of benthic macroinvertibrates includes the statement that Ceriodaphnia will be used in toxicity tests. Ceriodaphnia is not a benthic organism and the reason for inclusion of this statement at this point in the text is not clear. The text should be expanded to explain its inclusion or the statement should be moved to the discussion of toxicity testing.

REFERENCES

DOE, 1991. Final Historical Information Summary and Preliminary

Health Risk Assessment, Operable Unit 3, IHSS 200-202, Rocky Flats Plant. Golden, Colorado: U.S. Department of Energy, Environmental Restoration Program; June.

EG&G, 1990. Final Background Geochemical Characterization Report for 1989, Rocky Flats Plant. Golden, Colorado: EG&G Rocky Flats, Inc.; December.

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EPA, 1989. U.S. Environmental Protection Agency, "Risk Assessment Guidance for Superfund. Volume I Human Health Evaluation Manual (Part A), Interim Final, "EPA/540/1-889/002, December 1989.

Hem, J.D. 1985. Study and Interpretation of Chemical Characteristics of Natural Water. U.S. Geological Survey Water Supply Paper 2254. 3rd Edition. p. 263.